

California State University Channel Islands

Recommendations of the Academic Planning Task Force

A report to the Provost and the Executive Committee
of the Academic Senate

TRANSMITTAL

Date: June 29, 2005

To: Theodore Lucas, Provost and VPAA
Members of the Executive Committee of the Academic Senate

From: Task Force on Academic/Curricular Planning

Subject: Task Force Recommendations

The Task Force on Academic/Curricular Planning has completed its work and presents the attached report for your consideration. The report includes recommendations for implementation of new academic majors, emphases, graduate programs, and programs to be studied. In addition, the report recommends the movement of some existing programs from special sessions to state support and the creation of a new special sessions degree program.

An executive summary has been provided in addition to a program grid which depicts our recommendations. The executive summary concludes a series of action items where short term action is recommended. In addition, we have provided considerable background information as appendices, including much of the data that were used in our deliberations, as well as a record of the Task Force process.

The Task Force based its recommendations on estimated enrollment growth of between 400 and 450 Full Time Equivalent Students (FTES) per year. We propose a mix of programs to meet enrollment targets that are consistent with the mission of the university, respond to the needs of our students and Ventura County employers, and reflect the innovative spirit of CSUCI.

In addition to our programmatic recommendations, we also recommend that a process for academic planning be institutionalized. To this end we recommend that the report of our subcommittee on the academic planning process (Report: Academic Planning) be enacted as a formal policy of the Academic Senate. This proposal outlines a four year planning cycle for implementation of new major and graduate programs, and establishes an Academic Planning Group (modeled after this Task Force but also including student representation) to serve as an ongoing body for academic planning based on analysis of relevant data.

In putting together this report we have endeavored to place the interests of the whole university ahead of parochial desires. We recognize that academic planning needs to be an ongoing process built on the collection and analysis of data, and recommend adoption of the recommendations included in our report.

Members of the Task Force on Academic/Curricular Planning

Steve Lefevre (Co-Chair)

Scott Frisch (Co-Chair)

William Cordeiro

Joan Karp

Nancy Mozingo

Joan Peters

Steve Stratton

Amy Wallace

Gary Berg

Therese Eyermann

J.E. Gonzalez

Jane Sweetland

Recommendations of the Task Force on Academic/Curricular Planning

Executive Summary

June, 2005

The 2005 Task Force on Academic/Curricular Planning was organized at the request of Provost Lucas and the Executive Committee of the Academic Senate to draft an academic plan for the University that includes new majors and credentials through 2015. The Task Force was charged with creating a plan that would build on the curriculum plan developed during 2003-2004 and which would facilitate the University meeting its projected enrollment growth of between 400 and 450 additional Full Time Equivalent Students (FTES) per year.

The Task Force has spent months researching our faculty's program interests, costs of and enrollment in state support programs throughout the CSU, numbers of degrees granted in various programs, fastest growing programs across the U.S., fastest growing occupations nationally, the major interest areas of community college graduates, and potential job markets in the county. The Task Force also discussed Academic Plan goals with President Rush, met with all faculty and administrators interested in presenting or supporting program proposals, and met with representatives from the Ventura County Community Colleges.

The Task Force developed a series of four reports (See tabs labeled: Report) which include our major findings and recommendations for the future. In addition, we have prepared a planning grid for new programs which appears immediately following this summary. Based on our analysis, we have developed a plan we believe meets the mission and goals of CSUCI, supports our aggressive enrollment growth, proposes innovative programs, and prepares students for the 21st century workforce.

General Findings:

The Task Force recognizes the hard work that was done to develop the Curriculum Plan draft that was presented to President Rush in June 2004 (See 'Current Academic Plans'). This Curriculum Plan was developed through an open and democratic process that reflected faculty input from throughout academic affairs. However, the Task Force finds that the draft plan was overly ambitious in terms of the number of degrees to be offered, and would not adequately prepare the university for the rapid enrollment growth that is currently forecast as it does not include a sufficient number of large enrollment majors in the early years of the plan.

The Task Force concluded that the best, and perhaps only, way to accommodate anticipated enrollment growth of between 400 and 450 FTES per year is to create an Academic Plan that mixes large enrollment programs with a limited number of medium and/or smaller programs that are strongly supported by CSUCI faculty. In addition, because new programs do not begin at capacity enrollment, but must grow over time, and

since the realistic time frame for design, approval and implementation of a new degree program is three years, the Task Force recommends that some existing programs be expanded in order to meet enrollment targets. The Task Force recommends that this be done through the creation of new "emphases" within existing academic programs.

The Task Force is concerned about the rapid pace of implementation of new Masters degree programs that was called for in the June 2004 plan and recommends instead that CSUCI follow the CSU Chancellor's Office protocol for approving new Masters degrees. Masters degree programs are costly as they typically have much lower student faculty ratios (SFRs) than undergraduate programs, and the implementation of labor intensive Masters degree programs limits the resources available for the development of new undergraduate majors. The Task Force recommends that new Masters degree programs not be created until after the offering programs have undergone their five-year reviews, and then, as with all programs, they would be put on the Academic Plan according to the overall goals of curricular balance, enrollment targets, and community need.

In addition, the Task Force is concerned about the lack of cost and enrollment data that have been generated in the past by the academic planning process at CSUCI. We recommend that future planning include detailed cost analysis of the implementation and operating costs associated with new programs including new faculty salaries and benefits, equipment, supplies, facilities, and support staff as well as any costs resulting from accreditation or licensing. In addition, realistic forecasting of enrollment potential of new programs needs to be included in the planning process.

Finally, the Task Force recommends the adoption of a new three year planning process for new majors that allows time for curriculum planning, internal and external approvals and recruitment and hiring of faculty as well as marketing of the program prior to implementation. The Task Force also recommends the establishment of an academic planning group (composed of members of the Academic Senate Curriculum Committee and appropriate administrators) to ensure that the master plan is revisited on an annual basis and that data collection and analysis are institutionalized in the planning process.

Rationale for Inclusion of Programs on the Plan Grid:

The Academic Plan grid recommended by the Task Force follows this narrative. This plan differs from the June 2004 Curriculum Plan both in the earlier implementation of new large programs proposed to achieve balance and meet our ambitious enrollment goals, and in the postponement – or gradual inclusion - of smaller programs over the 2006-2013 period. The new large programs are a mix of previously proposed programs and programs the Task Force proposes based on our research and discussions with faculty, administration, and community college representatives. Undergraduate degrees with considerable doubt about the enrollment viability have not been placed on the plan at this time. However, we find that many of these programs can be initiated as emphases in existing or planned majors, and may warrant eventual placement on the plan as independent majors if demand appears to be sufficient to maintain a high quality academic program.

Proposed for 2006

- **B.A. in Performing Arts**, is offered at area community colleges, and will help meet the community need for a cultural center while also bringing CSUCI visible distinction. In addition, the development of Performing Arts will allow CSUCI to provide a stronger general education curriculum, as offerings in this area are currently lacking.
- **B.A. in Political Science** is a program necessary for academic balance and is a foundation major in the CSU system. It has the potential to be a medium to large enrollment major, and is not a high cost program. Ideally, an additional large enrollment major should be offered in 2006 to help meet enrollment targets, however, due to the lead time needed to develop a program and secure the necessary approvals, implementing a new program in fall 2006 that is not currently well along the path toward approval is not feasible.
- **Marketing emphasis for the BS in Business** degree as a way to help meet enrollment demands.

Proposed for 2007

- **BA in Communication** is a popular major throughout the CSU system and provides students with skills that are desired by 21st century employers.
- **BA in Early Childhood Studies** appears to be popular among area community college students and similar majors draw large enrollments across the CSU system.
- **BS in Nursing**, a medium size program, and meets an urgent need for nurses in the county. President Rush is currently building partnerships with area medical establishments in an effort to offset the costs of implementing a nursing program, which is a very high cost major.
- **B A. in Multicultural Studies** was conceived as an umbrella program that would house emphases in Chicano Studies and subsequently Gender Studies and eventually may support emphases in one of more of the following areas of study: Asian-Pacific, African-American, and Native American studies. The Task Force believes this is the best way to initiate what would otherwise be several very small programs that are nonetheless vital to the CSUCI mission and our academic balance. When the program is firmly established, the possibility of creating more specialized degree programs should be explored. We recommend that this program focus on applied applications to improve the career potential of future majors, and that an interdisciplinary committee be formed to design this program as soon as possible.
- **MA in Education (Principals Leadership)** be moved from a special sessions degree program to a state supported program and that a second emphasis (Special Education) be added to the MA in Education degree. This will begin the process of offering state supported Masters degrees in education to assist in the education of current and future teachers and school administrators, and will allow the education program to compete on a more level playing field

with its competitors who also offer Masters degrees in addition to post baccalaureate credentials.

Proposed for 2008

- **B.S. Kinesiology, Wellness, Nutrition and Health.** The wellness field is an area of rapid job growth in Ventura County and would likely generate high student demand as well. This program could become a signature program of CSUCI.
- **B.S. Criminal Justice** is a program that is in high demand among community college students and meets job needs in the area and state. In addition, Criminal Justice is a very low cost program. As with the other newly conceived programs, the Task Force recommends that planning begin immediately with the selection of necessary consultants to design curriculum.
- **Liberal Studies emphasis in Multiple Subject Education** which will allow students to pursue both a B.A. degree in Liberal Studies, and a teaching credential within four academic years (known as a blended program).
- **Masters of Arts in English** which will provide graduate education in English and assist the English program through the employment of students by the Writing Center.
- **MFA in Art** is recommended as a special sessions degree program offered through Extended Education.

Proposed for 2009

- **BS in Computer Engineering**, a program that will prepare students to meet the needs of area employers in this rapidly growing field.
- **BA in Philosophy** will help broaden our offerings as a comprehensive university and provide much needed support to our general education offerings, particularly in the area of critical thinking.
- **MS in Biology** will help us meet the needs of our students by providing technically trained graduates who will be popular with area employers.
- **Education specialist moderate/severe** is a credential that is in high demand among students and area schools.
- Three emphases are also recommended for 2009 which will help meet enrollment targets and broaden the scope of our offerings: **Accounting** (Business); **Theater** (Performing Arts) and an emphasis in Liberal Studies that will allow students to obtain a B.A. degree as well as a **Special Education** teaching credential in four years (another blended program).

Proposed for 2010

- **B.A. in Anthropology.** The Task Force supports Anthropology as an important major; however, it is typically a small enrollment major and we believe that overall enrollment at CSUCI will not be able to sustain the program until 2010.

- **Bachelors in Social Work** is proposed as new degree program which will prepare students in the helping professions and meet the area demand for increased numbers of social workers that are forecast.
- The **B.S. in Information Technology** degree is currently offered as a special sessions program; we recommend that this degree which should prove very popular with area Community College students as well as area employers, be transferred to state support.
- **M.A. in History** is also recommended for 2010 as are emphases in Finance (Business) and Music (Performing Arts).

Proposed for 2011

- **B.A. Geography and Urban Studies** is a program that will take advantage of developments in Geographic Information Systems (GIS) to prepare students for a variety of emerging careers in the private and public sectors.
- **Educational Technology Credential** to be offered by the Education program.

Proposed for 2012

- **B.A./B.S. in Applied Physics** which is currently scheduled for implementation in 2007 should be deferred until 2012, when enrollment at CSUCI should be able to support degrees.
- **Masters in Public Administration.** This program will provide professional education to members of the government and non-profit sectors, including employees of the university.

Proposed for 2013

- **M.S. in Nursing.** This program will assist in the advanced preparation of nurses and potentially provide instructors for the undergraduate nursing program.
- **Early Childhood Special Education credential** which fills a need in the area schools and supports our existing faculty expertise.

The Task Force does not offer any recommendations regarding new programs for 2014 and 2015.

Recommended Programs to be Studied:

In addition to the degrees, credentials and emphases that are included on our recommended plan, the Task Force identified a number of additional programs that should be studied for possible inclusion on the CSUCI academic master plan. These programs include several Masters degree programs: MA Speech and Language Pathology, MFA Creative Writing, MA History, MA Psychology, MA Clinical and Counseling Psychology, MA Marriage and Family Therapy, Masters of Social Work.

These Masters programs should be evaluated not only for their potential to attract sufficient student interest, their relationship to our mission and the career potential of graduates, they need also be analyzed regarding whether the program should be initiated as a special sessions degree through extended education, or as a state supported degree program.

In addition, at the undergraduate level we recommend that CSUCI explore offering another foreign language or foreign languages. We are uncertain whether an additional foreign language will be sustainable as a separate academic major, and recommend exploration of creative ways to offer additional language instruction, perhaps in cooperation with the Center for International Affairs. In addition to the emphases included in our recommendations, faculty members are encouraged to explore additional emphases for inclusion on future iterations of the academic plan. We recognize that many potentially viable emphases are not included in our recommendations; we typically included emphases that would assist in meeting enrollment targets and emphases that at other universities might be separate degree programs.

Action Items:

- For programs recommended for implementation in 2006, long forms must be the first order of business of the Faculty Senate Curriculum Committee when the Committee convenes for fall semester.
- The New program grid which follows this report should be considered by the Academic Senate for adoption early in Fall Semester.
- For programs that are recommended for implementation in 2007 and 2008, curricular planning must begin immediately. This should include the formation of interdisciplinary teams from among the CSUCI faculty, as well as the hiring of curricular consultants.
- The recommended Academic Planning Process outlines a new policy and as such must be considered and enacted by the Academic Senate.
- Studies should begin immediately on those programs where the Task Force recommended further analysis.

**Academic Program Grid, 2006-2013
Recommendation of Academic Planning Task Force**

Year	2006	2007	2008	2009	2010	2011	2012	2013
Degrees	BA Performing Arts	BA Communication	BA Criminal Justice	BS Computer Engineering	BA Anthropology	BA Geography & Urban Studies	BA/BS Applied Physics	MS Nursing
	BA Political Science	BA Early Childhood Studies	BA/BS Kinesiology/Wellness Nutrition/Health	BA Philosophy	Bachelors of Social Work		Masters of Public Administration	
		BA Multicultural Studies	MA English		MA History			
		BS Nursing		MS Biology				
Credentials	Bilingual Credential			Ed Specialist Moderate/Severe		Technology		Early Childhood Special Ed
Move from Special Sessions		MA Education (Principals Leadership)			BS Information Technology			
Emphases	Marketing (BS Business)	Chicano Studies (BA Multicultural Studies)	Blended Multiple Subjects Education (BA Liberal Studies)	Accounting (BS Business)	Finance (BS Business)			
		Special Education (MA Education)	Film/TV Studies (BA Communication/ Performing Arts)	Blended Special Education (BA Liberal Studies)	Music (BA Performing Arts)			
		Management – (BS Business)	Gender Studies (BA Multicultural Studies)	Theater (BA Performing Arts)				
Special Sessions			MFA Art					

Senate/Provost Joint Task Force on Academic/Curricular Planning

Membership:

Curriculum Committee of the Academic Senate
Dean of the Faculty/AVP for Curriculum Steve Lefevre
Dean of Extended Education Gary Berg
Institutional Research Officer Ernie Gonzalez
Special Assistant to the President Therese Eyermann
Dean of Enrollment Management Jane Sweetland

During Spring Semester the Task Force will draft an academic plan for the University that includes new majors and credentials through 2015. This academic plan should be reviewed and approved by the Academic Senate, Provost, and President by the end of Spring Semester 2005.

- a. The plan should build on the work of the Academic Planning Task Force and the curriculum plan developed by the Task Force during 2003-04.
- b. The plan should include a mixture of large and small enrollment majors that facilitate the University meeting its enrollment targets, currently projected to grow at about 400-450 FTES each year, and identify programs as appropriate for either state- and self-support.
- c. The Committee should involve the faculty and the wider University community in its planning and propose an academic plan that enjoys the strong support of the faculty.
- d. In its program planning the Task Force should be mindful of advancing the University's mission and of proposing innovative programs that meet the needs of the region and the state.
- e. The Task Force should coordinate its activities with the Physical Master Planning Committee, which is currently working on a physical plan for the campus.
- g. The Task Force should draw on information and data from other universities and from consultants regarding program innovations elsewhere and projected career and employment opportunities expected in the 21st Century.
- h. The Task Force should recommend a process for future curricular/master planning.

**Task Force on Academic Planning
Spring Semester, 2005
Membership**

Co-Chairs: Scott Frisch and Steve Lefevre

Members of the Senate Curriculum Committee:

Joan Peters

Amy Wallace

Bill Cordeiro

Nancy Mozingo

Steve Stratton

Faculty Member from Education: To be appointed

Dean of Extended Education: Gary Berg

Director of Institutional Research: Ernie Gonzalez

Dean of Enrollment Services: Jane Sweetland

Special Assistant to the President: Therese Eyermann

Support Staff: Kathy Musashi and Callie Pettit

DRAFT

Task Force on Academic Planning

Schedule of Work

February 8	Introductory Meeting
February 15	Discussion of Calendar, Report Structure & Assignment of Tasks
February 22	Meeting with President Rush (Tentative)
TBD	Meeting with Community Colleges Officials
March 1	Develop Criteria for Evaluating Programs
March 8	Reports from Subcommittees
March 15	Reports from Subcommittees
March 29	Discuss Subcommittee reports – Reach consensus on Plan
April 5	Finalize Task Force Recommendations and Report
April 12	Brown Bag Presentation(s) of Task Force Recommendation
April 19	Senate Executive Consideration
April 26	Academic Senate – First Reading
May 3	Academic Senate – Second Reading

Sub-Committees of the Task Force on Academic Planning

Analysis of External Data: Information on Ventura County demographics, Bureau of Labor Statistics, employment, work force, community college and high school patterns, economic forecasts and data on innovative programs at other universities.

Members: Therese Eyermann, Scott Frisch, and Amy Wallace

Internal Data Collection and Academic Planning Process: Information on CSU policies, planning practices at other CSUs, Statewide Academic Senate policies and recommendations. Recommend how to institutionalize an academic planning process for CSUCI and assess the process.

Members: Gary Berg, Steve Lefevre, Nancy Mozingo

CSUCI Enrollment Estimates: Data on future enrollment targets for the campus in relation to implementation dates for new programs.

Members: Ernie Gonzalez, Steve Lefevre, Jane Sweetland and Joan Karp

Budget Estimates: Costing out proposed programs, estimates of resource and facility needs.

Members: Gary Berg, Bill Cordeiro, Scott Frisch, Nancy Mozingo and Dan Wakelee

Faculty Data Collection and Analysis: Request and receive data from the faculty that proposed the programs currently on the Curriculum Plan.

Members: Joan Peters, and Stephen Stratton



Modeling Enrollment Growth in New and Existing Majors
Subcommittee on Enrollment of the Task Force on Academic Planning

5.17.05

Subcommittee on Enrollment Members:

J. E. Gonzalez, Ph.D.
Stephen Lefevre, Ph.D.
Jeanne Grier, Ph.D.
Jane Sweetland

Executive Summary

An analytical tool that was previously developed by J. E. Gonzalez in consultation with Stephen Lefevre was made available for use by the Subcommittee on Enrollment to model enrollment growth in new and existing majors. The Academic Planning Model assumes that approximately 100 student FTEs can be added each year in new majors. The model suggests that in order to meet projected enrollment targets, growth through 2010 will largely be accommodated by the expansion of its existing majors in '05-'06. The subcommittee notes that in order for new majors to contribute to enrollment growth, they must have the long-term potential to attract large enrollments. Secondly, each new major selected will play a significant role in shaping the campus's make-up for years to come. Output from the Academic Planning Model was combined with academic resource ratios to develop an Academic Resource Planning component to the model, which shows that the majority of additional faculty FTEs and number of instructional sections required to accommodate growth, will largely correspond to growth in existing majors.

Modeling Enrollment Growth in New and Existing Majors

J. E. Gonzalez, Ph.D.

Stephen Lefevre, Ph.D.

Subcommittee Members

Jeanne Grier, Ph.D. & Jane Sweetland

Background

The Academic Planning Model which had been previously developed by the authors (9.29.04) was made available for use by the Subcommittee on Enrollment of the Academic Planning Task Force. This analytical tool models enrollment growth in new and existing majors; and includes two growth scenarios for majors: weighted program growth, and proportional program growth. The model compares enrollment growth to targeted FTEs, and assumes that on an annual basis, approximately 100 student FTEs can be allocated to growth in new programs.

The addition of new majors each year has a differential impact on total enrollment. Initially, new majors add small additional enrollment to the campus base. But as majors become established, they grow and contribute to the base enrollment of all majors. However, given the specific enrollment targets that have to be reached annually through 2010, overall growth in enrollment will largely be based on the expansion of its existing majors in '05-'06.

Existing majors need to grow at a rate that reflects a realistic estimate of how much each program can expand and the rate of growth that the campus finds appropriate for a balance among academic programs. Simply stated, the growth of existing majors, plus the introduction of new majors will provide enrollment that meets University targets.

$$\text{FTEs in Existing Majors} + \text{FTEs in New Majors} = \text{Enrollment Targets}$$

Growing Existing and New Majors

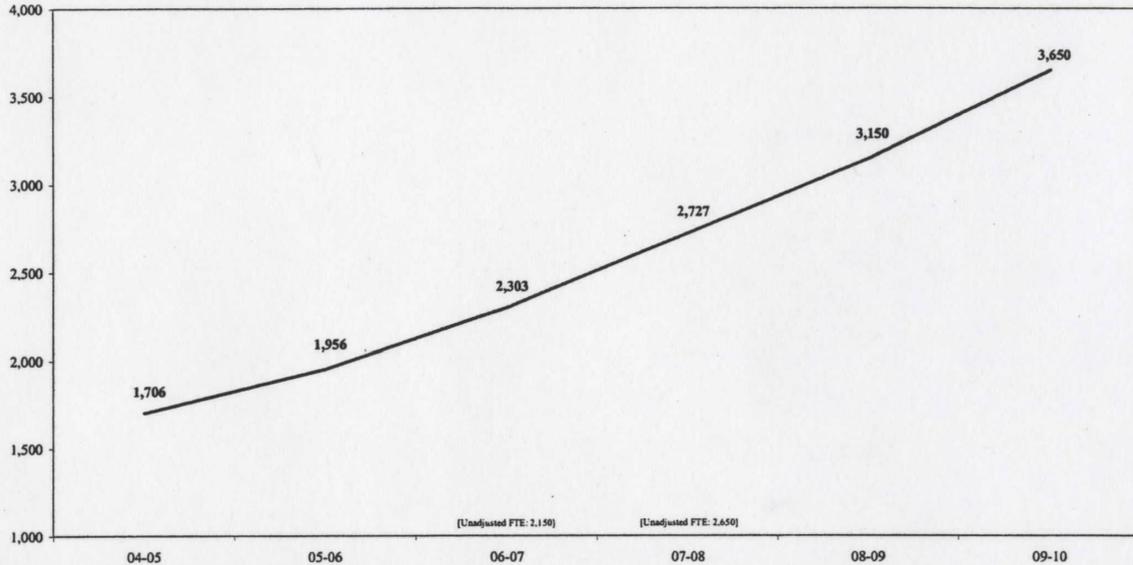
The Academic Planning Model is based on FTEs in majors/programs. Since total University enrollment includes undergraduate students that are enrolled in a major; undergraduate students that are "undecided" as to their major; and post-baccalaureate students—the FTEs in each category are differentiated, but for brevity are simply referred to as FTEs in majors.

The base year for the planning model is '05-'06. The campus enrollment targets that are used in the present model are based on Capital Planning Office projections. For modeling purposes, two points on the enrollment growth curve were smoothed. As shown in Exhibit 1, the annualized present year enrollment is 1,705 and it grows from 1,956 FTEs in '05-'06 to 3,650 FTEs in '09-'10.

Note: The 9.29.04 enrollment model, utilized FTE enrollment projections developed by the Analytical Studies Division of the CSU Chancellor's Office.

Exhibit 1

Five-Year Planning Model (FTE)—Based on Capital Planning Office Estimates
2005 - 2010
[Projected Line is Adjusted to Reflect Smooth Growth in '06 - '08]



Academic Planning Model

For each year of the model, students in a major, continue to the next year, at a rate that is differentiated if they are undergraduate or post-baccalaureate students. And since this rate further accounts for students that graduate, stop-out, or continue to the next year—it is referred to as a Differentiated Continuation Rate.

Since the purpose of this analytical tool is for planning academic programs, two growth scenarios were developed. Under the weighted program growth scenario—majors are described as: small, medium, or large. The designation of size is based on known university enrollments for such majors, and projected growth is based on this relative size. Under the proportional program growth scenario—it is assumed that majors will grow only in proportion to the percent FTE that they contribute to overall enrollment.

In this first version of the model, it is assumed that the designation of the major by weight or proportion will remain constant over time. In later versions of the model, these designations can be modified to allow for differentiated growth of majors over time. Bearing in mind the known effects of the assumptions used in these two scenarios, this analytical tool is internally consistent and provides a logical model for understanding enrollment growth in academic programs.

Definition of terms used in the Academic Planning Model:

- CR = Differentiated continuation rate
Assumption: CR = 80% for undergraduates, 60% for Post-Baccalaureates
- S_{xx}^i = Student FTEs in majors (i), each year (xx)
Example: S_{05-06}^{Math}
- C_{xx}^i = Continuing FTEs (i) in majors
- W_i = Major (i) weights
Assumption: Small weighted at 20, medium at 30, large at 40
- P_i = Major (i) proportions
Assumption: Percent distribution of FTEs in majors/programs
- NG_{xx}^i = Natural growth in majors (i)
- GEP_{xx} = Growth to existing majors
- T_{xx} = FTE target for each year (xx)
- 100 = FTEs allocated to new majors
- PRG_{xx}^i = Major growth

Formulas:

(1) Weighted Program Growth

$$CR \cdot S_{xx}^i \cdot W_i = NG_{xx}^i$$

(2) Proportional Program Growth

$$CR \cdot S_{xx}^i \cdot P_i = NG_{xx}^i$$

$$T - \sum_i NG_{xx}^i - 100 = GEP_{xx}$$

$$W_i \cdot GEP_{xx} = PRG_{xx+1}^i$$

$$P_i \cdot GEP_{xx} = PRG_{xx+1}^i$$

Meeting Enrollment Targets

The Academic Planning Model produces detailed data as shown in Tables 1-5.

In Table 1, the '05-'06 base year for the model, the annualized total FTE for '04-'05 is 1,706 which is reflected in cell [A13, 5]. Detailed information for majors is shown in Column 5. The differentiated continuation rate as applied to AY0405 FTEs is shown in Column 6, and the sum of FTEs is reflected in cell [A13, 6].

In Column 1, each major has been assigned a relative size: small, medium, or large. Examples of size designation include: Biology-medium [A2, 1], or Math-small [A7, 1]. Column 2 shows the corresponding weights assigned to majors: such as Biology which is weighted at 30 [A2, 2], or Math which is weighted at 20 [A7, 2].

The weights assigned to each major, shown in Column 7, are applied to data in Column 6; and the results in the adjusted major growth are shown in Column 10. Similarly, proportional growth in Column 8, results in adjusted program growth shown in Column 11. Column 10 and Column 11 respectively, correspond to weighted and proportional program growth.

The sum of the natural growth of existing majors for the two growth scenarios is shown in cells [A13, 10] and [A13, 11]. When subtracted from the target FTE [A14, 10 or A14, 11], the result is overall available growth in FTEs.

In the base year, four majors will be brought on-line, and they have been designated in size and weight [A16-A19, 1-2]; and as a result of this assignment in weights, it was determined that these new majors would total 100 FTEs. FTEs from the new majors, when subtracted from the overall available growth, result in additional growth to existing majors [A21, 10] and [A21, 11], respectively for the two planning scenarios.

The additional growth to existing majors is then distributed under the two scenarios as shown in Column 12 and Column 14. The sum of the FTEs, which reflect major growth, totals the specified enrollment targets. Major growth from the base year is then carried forward to the subsequent year of the model.

Since it will be the work of the Academic Planning Task Force to recommend the academic programs that will be brought on-line in future years, the model (see Tables 2-5) assumes that 100 FTEs represent a reasonable number of FTEs to be used as a proxy for the actual FTEs that will be associated with various combinations of majors ranging in size from small to large. Without having to specify actual majors, the model accounts for growth in increments of 100 FTEs for each subsequent year through 2010.

Once the Academic Planning Task Force recommends new majors, the model can be adjusted to reflect the estimated FTEs in each of the new majors, and the specific impact of their FTEs on overall enrollment growth.

Table 1

Academic Resource Planning (FTE) Model--Majors
2005-06 through 2009-10

[Rows, Cols]	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	
	05-06 Base Year				cont rt		various wts/pcts			05-06 + prg growth		05-06 + bal of stds				
	# major	wt	f04	s05	04-05	.8 / .6	prg.wt	prg.%	csu.%	prg.wt	prg.%	prg.wt	% grw	prg.%	%grw	
[A1]	X Undecided-Sm	20	85	79	82	66	0.056	0.048		69	69	91	0.315	86	0.245	
[A2]	1 Biology-Med	30	140	142	141	113	0.083	0.082	0.025	122	122	155	0.269	151	0.238	
[A3]	2 Business-Lrg	40	289	314	302	241	0.111	0.177	0.212	268	284	312	0.163	346	0.219	
[A4]	3 CS-Sm	20	61	63	62	50	0.056	0.036	0.027	52	51	74	0.418	64	0.248	
[A5]	4 Art-Med	30	109	118	113	91	0.083	0.066	0.026	98	97	131	0.334	120	0.241	
[A6]	5 English-Med	30	94	92	93	74	0.083	0.055	0.030	81	78	113	0.407	98	0.244	
[A7]	6 Mathematics-Sm	20	53	46	49	39	0.056	0.029	0.070	41	40	63	0.528	50	0.250	
[A8]	7 Psychology-Lrg	40	177	223	200	160	0.111	0.117	0.059	178	179	221	0.246	220	0.230	
[A9]	8 History-Med	30	71	82	76	61	0.083	0.045	0.018	66	64	99	0.497	79	0.246	
[A10]	9 ES&RM-Sm	20	36	36	36	29	0.056	0.021	0.004	30	29	52	0.724	37	0.252	
[A11]	10 LS-Lrg	40	383	406	394	315	0.111	0.231	0.103	351	388	394	0.125	470	0.209	
[A12]	11 PBACS-Lrg	40	161	154	157	94	0.111	0.092		105	103	149	0.417	136	0.314	
[A13]	Total est. FTEs	360	1656	1755	1706	1267	1.000	1.000		1462	1505	1856		1856		
[A14]	Cap Pln FTE Targets					1956				1956	1956	1956		1956		
[A15]	FTE Var: Cncl - Tot									494	451	100		100		
	new majors in 05-06															
[A16]	12 sociology-lrg	40														
[A17]	13 spanish-sm	20														
[A18]	14 chemistry-sm	20														
[A19]	15 economics-sm	20														
[A20]	Total est. FTEs	100								100	100	100		100		
[A21]	Avail. Overall Grwth									394	351	0		0		

Table 2

Academic Resource Planning (FTE) Model--Majors
2005-06 through 2009-10

[Rows, Cols]	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	
	06-07	05-06			cont rt		various wts/pcts			06-07		06-07				
	#	+ bal of stds			.8 / .6					+ prg growth		+ bal of stds				
	major	wt	prg.wt	prg.%	prg.wt	prg.%	prg.wt	prg.%	csu.%	prg.wt	prg.%	prg.wt	% grw	prg.%	%grw	
[B1]	X Undecided-Sm	20	91	86	73	69	0.0435	0.044		76	72	100	0.3166	92	0.289	
[B2]	1 Biology-Med	30	155	151	124	121	0.0652	0.077	0.025	132	130	168	0.2744	166	0.280	
[B3]	2 Business-Lrg	40	312	346	249	277	0.087	0.177	0.212	271	326	319	0.178	409	0.256	
[B4]	3 CS-Sm	20	74	64	59	51	0.0435	0.033	0.027	62	53	86	0.3895	68	0.292	
[B5]	4 Art-Med	30	131	120	105	96	0.0652	0.061	0.026	112	102	148	0.3242	131	0.284	
[B6]	5 English-Med	30	113	98	91	78	0.0652	0.050	0.030	97	82	133	0.3743	106	0.287	
[B7]	6 Mathematics-Sm	20	63	50	51	40	0.0435	0.026	0.070	53	41	77	0.4565	54	0.294	
[B8]	7 Psychology-Lrg	40	221	220	177	176	0.087	0.112	0.059	193	196	241	0.2506	249	0.271	
[B9]	8 History-Med	30	99	79	79	64	0.0652	0.041	0.018	84	66	121	0.4292	85	0.290	
[B10]	9 ES&RM-Sm	20	52	37	42	29	0.0435	0.019	0.004	44	30	68	0.5546	39	0.296	
[B11]	10 LS-Lrg	40	394	470	315	376	0.087	0.240	0.103	343	466	391	0.1407	579	0.243	
[B12]	11 PBACS-Lrg	40	149	136	89	81	0.087	0.069		97	87	145	0.4975	120	0.376	
[B13]	12 sociology-lrg	40	40	40	32	32	0.087	0.020	0.028	35	33	83	1.3875	42	0.296	
[B14]	13 spanish-sm	20	20	20	16	16	0.0435	0.010	0.007	17	16	41	1.4453	21	0.299	
[B15]	14 chemistry-sm	20	20	20	16	16	0.0435	0.010	0.004	17	16	41	1.4453	21	0.299	
[B16]	15 economics-sm	20	20	20	16	16	0.0435	0.010	0.010	17	16	41	1.4453	21	0.299	
[B17]	Total est. FTEs	460	1956	1956	1535	1538	1.000	1.000		1648	1731	2203		2203		
[B18]	Cap Pln FTE Targets									2303	2303	2303		2303		
[B19]	FTE Var: Cncl - Tot									655	572	100		100		
	new majors in 06-07															
[B20]	x New FTEs in 0607	100														
[B23]	Total est. FTEs	100								100	100	100		100		
[B24]	Avail. Overall Grwth									555	472	0		0		

Table 3

Academic Resource Planning (FTE) Model--Majors
2005-06 through 2009-10

[Rows, Cols]	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]
	07-08 # major	06-07 + prg growth		cont rt .8 / .6		various wts/pcts			07-08 + prg growth		07-08 + bal of stds				
		wt	prg.wt	prg.%	prg.wt	prg.%	prg.wt	prg.%	csu.%	prg.wt	prg.%	prg.wt	% grw	prg.%	%grw
[C1]	X Undecided-Sm	20	100	92	80	74	0.0392	0.040		83	77	111	0.326	100	0.301
[C2]	1 Biology-Med	30	168	166	134	133	0.0588	0.072	0.025	142	143	183	0.286	184	0.292
[C3]	2 Business-Lrg	40	319	409	256	327	0.0784	0.178	0.212	276	386	330	0.197	488	0.265
[C4]	3 CS-Sm	20	86	68	69	55	0.0392	0.030	0.027	72	56	99	0.380	74	0.304
[C5]	4 Art-Med	30	148	131	118	105	0.0588	0.057	0.026	125	111	166	0.326	143	0.296
[C6]	5 English-Med	30	133	106	106	84	0.0588	0.046	0.030	113	88	153	0.362	115	0.299
[C7]	6 Mathematics-Sm	20	77	54	62	43	0.0392	0.023	0.070	64	44	91	0.425	57	0.306
[C8]	7 Psychology-Lrg	40	241	249	193	199	0.0784	0.108	0.059	208	220	262	0.262	283	0.282
[C9]	8 History-Med	30	121	85	96	68	0.0588	0.037	0.018	102	71	143	0.399	92	0.301
[C10]	9 ES&RM-Sm	20	68	39	54	31	0.0392	0.017	0.004	56	31	83	0.483	41	0.307
[C11]	10 LS-Lrg	40	391	579	313	463	0.0784	0.251	0.103	337	580	392	0.161	725	0.250
[C12]	11 PBACS-Lrg	40	145	120	87	72	0.0784	0.052		94	76	148	0.578	105	0.396
[C13]	12 sociology-lrg	40	83	42	66	34	0.0784	0.018	0.028	72	34	126	0.759	45	0.307
[C14]	13 spanish-sm	20	41	21	33	17	0.0392	0.009	0.007	34	17	61	0.801	22	0.310
[C15]	14 chemistry-sm	20	41	21	33	17	0.0392	0.009	0.004	34	17	61	0.801	22	0.310
[C16]	15 economics-sm	20	41	21	33	17	0.0392	0.009	0.010	34	17	61	0.801	22	0.310
[C17]	x New FTEs in 06-07	50	100	100	80	80	0.098	0.043		88	83	156	0.773	108	0.300
[C20]	Total est. FTEs	510	2303	2303	1813	1819	1.000	1.000		1934	2051	2627		2627	
[C21]	Cap Pln FTE Targets									2727	2727	2727		2727	
[C22]	FTE Var: Cncl - Tot									793	676	100		100	
new majors in 07-08															
[C23]	xx New FTEs in 07-08	100													
[C27]	Total est. FTEs	100								100	100	100		100	
[C28]	Avail. Overall Grwth									693	576	0		0	

Table 4
 Academic Resource Planning (FTE) Model--Majors
 2005-06 through 2009-10

[Rows, Cols]	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]
	08-09 # major	07-08 + prg growth			cont rt .8 / .6		various wts/pcts			08-09 + prg growth		08-09 + bal of stds			
		wt	prg.wt	prg.%	prg.wt	prg.%	prg.wt	prg.%	csu.%	prg.wt	prg.%	prg.wt	% grw	prg.%	%grw
[D1]	X Undecided-Sm	20	111	100	88	80	0.0357	0.037		92	83	119	0.299	105	0.267
[D2]	1 Biology-Med	30	183	184	147	147	0.0536	0.068	0.025	154	157	195	0.266	198	0.259
[D3]	2 Business-Lrg	40	330	488	264	390	0.0714	0.179	0.212	283	460	338	0.193	568	0.235
[D4]	3 CS-Sm	20	99	74	79	59	0.0357	0.027	0.027	82	60	109	0.334	77	0.270
[D5]	4 Art-Med	30	166	143	133	115	0.0536	0.053	0.026	140	121	181	0.293	152	0.263
[D6]	5 English-Med	30	153	115	123	92	0.0536	0.042	0.030	129	96	170	0.318	121	0.266
[D7]	6 Mathematics-Sm	20	91	57	73	46	0.0357	0.021	0.070	76	47	103	0.362	59	0.271
[D8]	7 Psychology-Lrg	40	262	283	210	226	0.0714	0.104	0.059	225	249	279	0.244	312	0.251
[D9]	8 History-Med	30	143	92	114	74	0.0536	0.034	0.018	120	76	161	0.341	97	0.268
[D10]	9 ES&RM-Sm	20	83	41	67	33	0.0357	0.015	0.004	69	33	96	0.396	43	0.273
[D11]	10 LS-Lrg	40	392	725	313	580	0.0714	0.266	0.103	336	734	391	0.163	894	0.219
[D12]	11 PBACS-Lrg	40	148	105	89	63	0.0714	0.039		95	66	150	0.574	89	0.355
[D13]	12 sociology-lrg	40	126	45	101	36	0.0714	0.017	0.028	108	37	163	0.507	47	0.272
[D14]	13 spanish-sm	20	61	22	49	18	0.0357	0.008	0.007	51	18	78	0.540	23	0.275
[D15]	14 chemistry-sm	20	61	22	49	18	0.0357	0.008	0.004	51	18	78	0.540	23	0.275
[D16]	15 economics-sm	20	61	22	49	18	0.0357	0.008	0.010	51	18	78	0.540	23	0.275
[D17]	x New FTEs in 06-07	50	156	108	125	87	0.0893	0.040		136	90	204	0.504	114	0.266
[D18]	xx New FTEs in 07-08	50	100	100	80	80	0.0893	0.037	0.018	87	83	156	0.785	105	0.267
[D24]	Total est. FTEs	560	2727	2727	2152	2161	1.000	1.000		2284	2446	3050		3050	
[D25]	Cap Pln FTE Targets									3150	3150	3150		3150	
[D26]	FTE Var: Cncl - Tot									866	704	100		100	
new majors in 08-09 scenario 1=100 ftes															
[D27]	xxx New FTEs in 08-09	100													
[D30]	Total est. FTEs	100								100	100	100		100	
[D31]	Avail. Overall Grwth									766	604	0		0	

Table 5
 Academic Resource Planning (FTE) Model--Majors
 2005-06 through 2009-10

[Rows, Cols]	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]
	09-10 # major	08-09 + prg growth			cont rt .8 / .6		various wts/pcts			09-10 + prg growth		09-10 + bal of stds			
		wt	prg.wt	prg.%	prg.wt	prg.%	prg.wt	prg.%	csu.%	prg.wt	prg.%	prg.wt	% grw	prg.%	%grw
[E1]	X Undecided-Sm	20	119	105	95	84	0.0328	0.033		98	87	128	0.306	110	0.268
[E2]	1 Biology-Med	30	195	198	156	159	0.0492	0.063	0.025	164	169	209	0.275	213	0.261
[E3]	2 Business-Lrg	40	338	568	270	455	0.0656	0.180	0.212	288	537	348	0.209	663	0.235
[E4]	3 CS-Sm	20	109	77	87	61	0.0328	0.024	0.027	90	63	120	0.334	80	0.271
[E5]	4 Art-Med	30	181	152	145	122	0.0492	0.048	0.026	152	128	197	0.297	162	0.265
[E6]	5 English-Med	30	170	121	136	97	0.0492	0.038	0.030	143	101	188	0.316	127	0.267
[E7]	6 Mathematics-Sm	20	103	59	82	48	0.0328	0.019	0.070	85	48	115	0.354	62	0.272
[E8]	7 Psychology-Lrg	40	279	312	224	250	0.0656	0.099	0.059	238	274	298	0.253	344	0.252
[E9]	8 History-Med	30	161	97	129	77	0.0492	0.031	0.018	136	80	181	0.333	101	0.269
[E10]	9 ES&RM-Sm	20	96	43	77	34	0.0328	0.013	0.004	80	34	110	0.378	44	0.274
[E11]	10 LS-Lrg	40	391	894	312	715	0.0656	0.284	0.103	333	919	393	0.181	1117	0.216
[E12]	11 PBACS-Lrg	40	150	89	90	53	0.0656	0.028		96	55	156	0.627	75	0.360
[E13]	12 sociology-lrg	40	163	47	130	37	0.0656	0.015	0.028	139	38	199	0.434	48	0.273
[E14]	13 spanish-sm	20	78	23	62	18	0.0328	0.007	0.007	64	18	95	0.467	23	0.275
[E15]	14 chemistry-sm	20	78	23	62	18	0.0328	0.007	0.004	64	18	95	0.467	23	0.275
[E16]	15 economics-sm	20	78	23	62	18	0.0328	0.007	0.010	64	18	95	0.467	23	0.275
[E17]	x New FTEs in 06-07	50	204	114	163	91	0.082	0.036		177	95	252	0.426	120	0.268
[E18]	xx New FTEs in 07-08	50	156	105	124	84	0.082	0.033	0.018	135	87	210	0.559	110	0.268
[E19]	xxx New FTEs in 08-09	50	100	100	80	80	0.082	0.032	0.006	87	83	162	0.869	105	0.269
		610	3150	3150	2490	2502	1.000	1.000		2632	2851	3550		3550	
										3650	3650	3650		3650	
	new majors in 08-09 scenario l=100 ftes									1018	799	100		100	
[E27]	xxxx New FTEs in 09-10	100													
[E31]	Total est. FTEs	100								100	100	100		100	
[E32]	Avail. Overall Grwth									918	699	0		0	

Lessons from Modeling Enrollment Growth

A few of the general conclusions that follow from the enrollment analysis are:

- The majority of campus enrollment growth through 2010 will come through the *expansion of its existing ten majors and to a lesser extent from growth in majors begun in 2005 and 2006*. Majors begun after that time likely will not have the opportunity to contribute significantly to growth over the medium term.
- In selecting among available new majors, the University must recognize that majors which have *the potential to attract large number of students will greatly assist it in achieving the ambitious targets set for the campus* over the next years. Not only do large major start from a larger base, they also add students at a faster rate in out years.
- By the same token, *small majors contribute less significantly to campus enrollment growth*, and thus require that the campus instead find enrollment among existing majors.
- Major that the campus identifies over next three or four years will *play a significant role* in shaping the campus's make-up for years to come. These new majors will have high expectations of enrollment growth and therefore will have an important presence among University degrees.

Future Action

The Task Force on Academic Planning will be identifying new majors to be implemented over the next eight to ten years.

The Subcommittee recommends that as the new majors are identified as part of the academic plan, the enrollment criteria included in this report be included in its thinking.

The Subcommittee recommends that each new major on the academic plan be integrated into the enrollment model to determine its effect on overall University student growth.

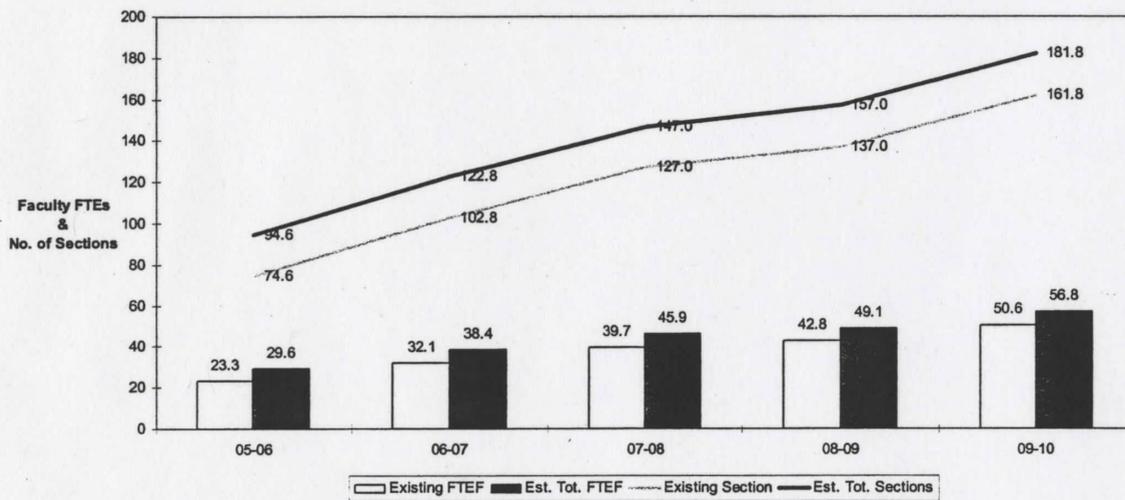
Academic Resources to Support Projected Enrollment

In a previous study of academic resources that was conducted by the authors, it was found that 100 student FTEs require 6.25 faculty members (FTEF) to provide instruction. Also, 100 student FTEs require that 20 instructional sections be provided.

Taking the output from the Academic Planning Model that relates to growth either to existing majors or to new majors, and applying the faculty and instructional sections ratios, results in the following projected resource requirements.

Exhibit 2

Chart 5aEst. Faculty Resources and No. of Sections Required to Accommodate Projected Growth
Resources Required for New Proportional Growth are Shown
Exact Figures Can be Obtained by Adding Estimates to Existing Faculty Resources and Sections



The red bar represents the total additional faculty that will be required to provide instruction to accommodate total enrollment growth. The white bar represents additional faculty required to accommodate growth in existing majors. The difference between the two values corresponds to FTEFs associated with 100 student FTEs in new majors.

Similarly, the black line represents the total additional instructional sections that will be required to accommodate total enrollment growth. The gray line represents additional instructional sections to accommodate growth in existing majors. The difference between the two values corresponds to instructional sections associated with 100 student FTEs in new majors.

The Academic Resource Planning component of the Academic Planning Model shows that the majority of additional FTEFs and instructional sections required to accommodate growth, largely corresponds to growth in existing majors.



Toward an Academic Planning Process

June 2005

Members of the Subcommittee of the Task Force on Academic Planning charged with outlining an academic planning process for CSUCI made a number of recommendations. Members of the subcommittee were Gary Berg, Scott Frisch, Nancy Mozingo, and Steve Lefevre. These recommendations were modified by the Task Force and approved in the language below:

Institutionalizing the Process of Academic Planning

A long range academic plan is central to the success of overall University planning efforts. Institutionalizing the process of academic planning is intended to provide for thoughtful discussion of program growth, to assist the campus in responding to regional and state program needs, and to support the University's mission. Additionally, the Western Association of Schools and Colleges (WASC) standards and recommendations underscore the need for a planning process.

CSU Channel Islands' academic plan is intended to direct on-going discussion of facilities needs and to assist the campus in identifying and prioritizing future construction and renovation. Academic planning is essential in projecting future faculty and staff hiring and in setting campus budget priorities. Finally, academic planning is central to CSUCI attaining student enrollment targets projected for the next ten years.

Toward this end, we recommend that CSU Channel Islands commit to an ongoing academic planning process. We recommend that the University's academic plan, as it emerges from the Task Force's work this spring, and is approved by the Senate and the Provost, is updated on a regular basis.

It recommends that we have in place an Academic Planning Committee (APC) of faculty and administrators charged with:

- collecting empirical data and information on program needs in the region and the state;
- identifying emerging fields and degree opportunities that further CSUCI's mission;
- soliciting input from campus and community constituencies on program priorities;
- providing cost estimates for new and projected programs;

- providing recommendations on majors, minors, emphases and other programs to the Provost and the Academic Senate; all new degrees need to be approved by the Senate
- coordinating the introduction of state-support and self-support programs by working closely with the Dean of Extended Education.

Composition of the Academic Planning Committee.

The Academic Planning Committee should be composed of the following members:

Faculty serving on the Curriculum Committee. These faculty will provide continuity and flow of information between those involved in planning and those responsible for reviewing proposals for new majors, minors, and courses.

The AVP for Academic Programs and Planning, the Dean of Extended Education, a designee from the President's Office, the Director of Institutional Research, a faculty representative from the General Education Committee, and a student representative.

Other administrative areas may be asked for information and staff support in order to assist the planning process. The AVP for Academic Programs and Planning will coordinate the activities of the Academic Planning Committee.

Responsibilities of the Academic Planning Committee would include:

Updating the Campus Master Plan. Each January, the University submits an updated five- or ten-year master plan to the Chancellor's Office. The Planning Committee will provide recommendations to the Academic Senate and Provost on updates to that plan. While this annual Academic Plan updates only degrees and only lists each of these by name, the Planning Committee in contrast may make recommendations not only on degrees, but also on credentials, minors, and emphases within programs to assist the campus to anticipate the phasing in of new program areas over time.

Developing Timelines for New Degrees and Programs. Produce an implementation time line for each new degree and program approved as part of the University's academic plan. That time line would identify key decision points along the path from initial program conception to implementation: short form approval, long form approval, recruitment and hiring decision-points, submission to the Chancellor's Office, catalog publication, articulation, and course approval deadlines.

Identify and Develop Timelines for Emphases within Existing Majors and Programs. The Task Force agrees that an important aspect of the expansion of future academic offerings will be the creation and implementation of emphases

within existing majors and programs, and the addition of minors. As the campus addresses the need for innovation and mission related degrees, unique 'tracks,' 'certificates,' and 'credentials' within existing majors will play a significant role. They help the campus identify areas of distinctive programming within familiar titles and majors. They develop out of existing programs where student interest and enrollment have been demonstrated, and they typically do not require new resources in administrative organization. Yet, because of their impact on the academic program these emphases and minors need to be incorporated into the academic planning process.

Therefore, the Task Force recommends that, with the leadership of the faculty and chair of the relevant program area or areas, the Academic Planning Committee identify new emphases and minors and calendar them as part of master planning process. The planning lead time for emphases does not need to be as lengthy as for new degrees, in part because these do not require off-campus approval. Planning for emphases and minors should begin at least 18 months before intended implementation to allow for curriculum committee and academic affairs approval, inclusion in the catalog and schedule, dissemination program information, and articulation.

Moving Programs from Self-Support to State Support. When it is proposed that degrees offered through self support by the Office of Extended Education should be moved to state support, these degrees should be submitted to the Academic Planning Committee eighteen months before intended implementation. After discussion with interested parties, the APC will make a recommendation to the Senate and the Provost for approval.

Providing Program Information to the Curriculum Committee. With a timeline for new degrees in place, the Curriculum Committee will continue its current responsibilities for reviewing and recommending approval of new degrees, majors, minors, emphases, and courses. It is important to affirm that the Academic Planning Committee will not supersede the Curriculum Committee's responsibilities for program and course approval. Instead, it will assist that Committee and others with wider program planning information and review and approval of degree short forms.

Solicit Input on New Majors and Programs. Solicit suggestions from faculty and staff, Provost and President, and from community constituencies about innovative and in-demand programs that would provide vital educational opportunities for students in the region. This input may come in the form of organized information meetings with community organizations, businesses, educational Committee, and public agencies.

Soliciting Information from Institutional Research (IR) and the Enrollment Management Committee (EMSS) on Program Growth. Recognizing the importance of enrollment growth and the valuable information generated by IR and EMSS, the Planning Committee would include data on enrollment projections for existing majors and for new majors in making recommendations

on expansion of the university into new curriculum areas. EMSS will supply information on trends in enrollment and IR will supply enrollment projections.

New Degree Program Timeline

The New Degree Program Timeline (Graph I) displays a model timeline for new degree programs, majors, and credentials. It is intended to show the sequence of tasks needed for the successful identification, review, approval, and implementation of new programs.

Emphasis and Credentials. Since enrollment growth in existing majors will require the addition of new emphases, credentials and minors, the timeline includes a process for scheduling their planning and implementation.

This timeline and sequence can be accelerated, especially for programs that do not require off campus approval.

The Workflow for New Degrees (Graph II) displays how this model timeline might be adapted to degrees that currently appear on the University's academic plan and how it might be configured for future degrees identified for 2007 and beyond.

Calendar of the Academic Planning Committee

The Academic Planning Committee would conduct the bulk of its work in spring semester each year, with the responsibility of providing recommendations at the end of the spring term on program changes to the master plan. These recommendations, in the form of an approved short form would be reviewed by the Curriculum Committee and Academic Senate in late spring or early fall. This will enable the campus to have an updated plan ready for submission from the President and Provost to the Chancellor's Office by December.

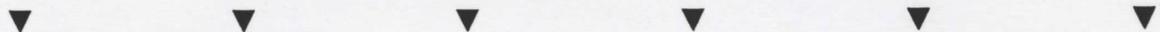
The AVP for Academic Programs and Planning will be responsible for submitting materials to the Chancellor's Office and responding to System requests for information and program changes.

GRAPH I – New Degree Program Timeline

TIMELINE FOR COMPLETION OF TASKS ►		YEAR 1		YEAR 2		YEAR 3		YEAR 4	
TASKS to COMPLETE ▼		Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
PLANNING	Fall of Year One								
	Create Team to Develop Degree	▶▶▶▶▶							
	Hire Consultant if Needed	▶▶▶▶▶							
	Solicit Information from Internal/External Groups	▶▶▶▶▶							
	Draft Short form	▶▶▶▶▶							
	Spring of Year One								
	Submit/Approval of Short Form to APC		▶▶▶▶▶						
	Begin Draft of Long Form and Courses		▶▶▶▶▶						
APPROVAL	Fall of Year Two								
	Submit Long form to Curr Cte by 1st Monday in October			▶▶▶▶▶					
	Identification of New Faculty Positions			▶▶▶▶▶					
	Spring of Year Two								
	Long Form Submitted to Chancellor's Office in January				▶▶▶▶▶				
	Recruitment and Hiring of New Faculty				▶▶▶▶▶				
	Program Articulation with Community Colleges				▶▶▶▶▶				
	Respond to Chancellor's Office Review of Long Form (May)				▶▶▶▶▶				
STAFFING/SCHEDULING	Fall of Year Three								
	Update Program Description and Courses					▶▶▶▶▶			
	New Faculty: Define Position(s) & Begin Recruitment					▶▶▶▶▶			
	Accept Freshmen/Transfer Applications					▶▶▶▶▶			
	Draft Catalog Copy					▶▶▶▶▶			
	Place Degree on CSU Mentor					▶▶▶▶▶			
	Spring of Year Three								
	Faculty Interviews and Hiring						▶▶▶▶▶		
	Student Recruitment						▶▶▶▶▶		
	Final Printing of Catalog Copy						▶▶▶▶▶		
	Put Program and Courses in Schedule of Classes						▶▶▶▶▶		
GO	Fall of Year Four/Implementation of Degree								
	Implementation of Degree							▶▶▶▶▶	

GRAPH II – Workflow for New Degrees (2005-2010)

DEGREE / PROGRAM	2005	2006	2007	2008	2009	2010
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BA	Performing Arts	Staffing/Scheduling	Implementation
BA	Political Science	Staffing/Scheduling	Implementation
MA	English	Staffing/Scheduling	Implementation

BA	Anthropology	Approvals	Staffing/Scheduling	Implementation
BA	Applied Physics	Approvals	Staffing/Scheduling	Implementation
BA	Chicano Studies	Approvals	Staffing/Scheduling	Implementation
BA	Early Childhood Studies	Approvals	Staffing/Scheduling	Implementation
BS	Applied Physics	Approvals	Staffing/Scheduling	Implementation

2008 Implementation

Degree Model A
Degree Model B
Degree Model C

Planning	Approvals	Staffing/Scheduling	Implementation
Planning	Approvals	Staffing/Scheduling	Implementation
Planning	Approvals	Staffing/Scheduling	Implementation

2009 Implementation

Degree Model A
Degree Model B
Degree Model C

Planning	Approvals	Staffing/Scheduling	Implementation
Planning	Approvals	Staffing/Scheduling	Implementation
Planning	Approvals	Staffing/Scheduling	Implementation

2010 Implementation

Degree Model A
Degree Model B
Degree Model C

Planning	Approvals	Staffing/Scheduling	Implementation
Planning	Approvals	Staffing/Scheduling	Implementation
Planning	Approvals	Staffing/Scheduling	Implementation

Lines of Approval for Academic Planning

The Academic Planning Committee would report its recommendations to the Academic Senate and the Provost. It would make its findings and recommendations available to the President, Provost, Academic Senate Executive Committee, Curriculum Committee, and to UPACC.



Report of the Subcommittee on Costs, Academic Master Planning Task Force

5/17/05

Subcommittee on Costs:

Gary Berg, Dean of Extended Education
William Cordeiro, Professor of Business
Scott Frisch, Associate Professor of Political Science
Nancy Mozingo, Assistant Professor of Biology

Background:

The costs associated with implementing and sustaining high quality academic programs vary considerably by discipline. Although the costs of an academic program should not be the driving force behind the decision to pursue an undergraduate academic major, graduate degree, or credential program, some consideration needs to be given to the overall financial impact of each decision made in the academic planning process. The following report summarizes our preliminary research on academic programmatic costs, highlighting the factors that should be considered by decision makers.

The analysis presented below is meant to be a first effort at identifying and quantifying the costs associated with *operating a fully implemented academic program*. The start-up costs of programs vary considerably as well; however, there is virtually no benchmark data available on the cost of initiating a new program. As a start-up university in the twenty first century, CSUCI has few models to learn from; therefore costs associated with implementing a new program (technology and equipment needs, for example) need to be considered on a case by case basis. In addition, no effort has been made in this report to capture the additional facilities costs that can be quite substantial for programs requiring space that exceeds the traditional classroom (such as labs, sports facilities, and performance venues). Finally, the cost of specialized accreditation and licensing associated with some programs cannot be ignored. The increased cost associated with this kind of accreditation can come from guidelines on the number of full-time faculty per student (limiting class size), consultants and/or faculty release time for preparing and updating accreditation, mandated resource levels (library facilities for example), and fieldwork or clinical hours requirements. We urge decision-makers not to overlook the

potentially costly expenses that can be associated with starting a new program and program accreditation, and recommend that a detailed resource analysis be undertaken as part of the program approval process for each new program.

Undergraduate Degree Program Operating Costs:

It is first necessary to distinguish between the costs of undergraduate and graduate programs when seeking to compare costs across disciplines. Graduate classes typically are taught in seminar format, necessitating smaller student faculty ratios than are common in undergraduate courses. As labor costs typically comprise 85 to 90 percent of direct instructional costs, fewer students per faculty member equates to higher cost of instruction. The California State University Chancellor's Office recommends special considerations for implementation of new master's degree programs (see below), therefore graduate programs will be considered separately in this report.

There are several sources of benchmark data related to the costs of undergraduate education. While none of the data sources provides a complete picture of the costs of operating an undergraduate program, taken together data from the different sources provide a basis for comparison between the costs associated with different academic majors. The National Study of Instructional Costs and Productivity (typically referred to as the Delaware Study) provides benchmark data on the average direct cost to educate a student at a comprehensive university. These data have been collected for undergraduate disciplines typically found at most colleges and universities.¹ While the most recent data from the Delaware Study are from the 1997 academic year, these data do allow for the relative costs of different programs to be compared.

In addition, the California State University Chancellor's Office collects data on the average student faculty ratios (SFR) of programs offered throughout the system, and these data are helpful in determining how labor intensive a given program may be. As faculty labor is the driving costs behind the delivery of academic programs, SFR's provide a useful surrogate for comparing the costs of different academic programs.

Finally, there is a relationship between program size and program cost. Academic majors must maintain sufficient enrollment to support the array of specialized upper division course offerings typically filled only by majors. Major programs failing to meet a threshold size typically are a drain on the resources of a university, as upper division courses necessary for students to graduate must be regularly offered even if enrollments are low. Therefore, data on the relative enrollment potential of majors are directly related to costs. In addition a strong measure of a major's feasibility is the upper division

¹ See U.S. Department of Education, National Center for Education Statistics. *A Study of Higher Education Instructional Expenditures: The Delaware Study of Instructional Costs and Productivity*. NCES 2003-161, by Michael F. Middaugh, Rosalinda Graham, and Abdus Shahid. Project Officer: C. Dennis Carroll. Washington, DC 2003. and Middaugh, Michael F. 2001. "Measuring Higher Education Costs: Considerations and Cautions." In Alisa F. Cunningham et al ed. *Study of College Costs and Prices, 1988-1989--1997-1998*. Volume 2: Commissioned Papers. NCES 2002-158. U.S. Department of Education, Office of Educational Research and Improvement. Washington, DC.

student faculty ratio which should not be significantly less than the CSU average SFR of 21.4 to 1.

Table One includes available data on relevant undergraduate majors for all programs listed on the preliminary curriculum plan of June 2004, as well as all majors currently offered at CSUCI. Programs are ranked in order of number of graduates (or credentials granted) from the California State University system in academic year 2003. The year column indicates the year that the program was slated for implementation under the plan submitted in June 2004. The national cost figures were obtained from the Delaware Study. CSUCI costs are the total 2005-2006 expenditure recommendation from the Academic Resources Committee for the program divided by the program's FTES target. CSU SFR data for each program as well as upper division courses offered by a program were obtained from the CSU Academic Discipline Report [<http://www.calstate.edu/cim/APDB>] published by the CSU Chancellor's Office, and total 2003 degrees awarded by the CSU system were obtained from the report Undergraduate Degrees Granted by Campus, Major and Sex 2002-2003 [http://www.calstate.edu/as/stat_reports/2002-2003/deg05.htm].

Table One

Program	Year	National Cost	CSUCI Cost/FTES	CSU SFR	CSU UD SFR	2003 CSU Degrees
Education	Current	3521	6411	16.9	18.4	Credentials
Business BA	Current	3703	6691	26.3	27	13057
Liberal Studies BA	Current	3065				6381
Psychology BA	Current	2819	3647	28	28.1	3648
English BA	Current	3019	5753	20.1	20.6	1871
Criminal Justice BA	2010	2711		31.5	32.2	1780
Communications BA	2008	3471		22.1	21.8	1770
Sociology BA	2005	2746	5191	30.1	27.4	1735
Computer Science BS	Current	3376	8694	18	18.5	1656
Art BA	Current	4568	5775	18.8	17.1	1582
Child Development BA	2007			22.1	21.7	1568
Biology BS/BA	Current	3700	10726	20.1	16.5	1554
Kinesiology BS	2009	3319		14.6	16.5	1394
Nursing BS	2010	7230		12	12.5	1259
Political Science BA	2006	3582	5269	30.5	22.7	1112
History BA	Current	3122	4091	29.1	21	1108
Performing Arts (Music, Theater, Dance)	2006	5385				877
Economics BA	2005	3213		29.8	23.8	635
Spanish BA	2005	2962	5552	21	18.7	446
Music BA	2013	6346		16.2	15.4	426
Mathematics BS	Current	3283	5059	25.1	16.7	425
Anthropology BA	2007	3020	4858	26.5	23.4	388
Geography and Urban Studies BA	2009	2953		24	20.4	329
Environmental Science & Resource Mgmt	Current		12254			273
Philosophy BA	2009	3173		29.1	23.5	268
Chemistry BS/BA	2005	4439	11306	18.2	13.4	218
Multicultural Studies BA	2007	3102		24.2	20.5	171
International Relations BA	2014					155
Film Studies BA	2014					150
Geology BS/BA	2008	4607		20.8	17.4	124
Physics BS/BA	2007	5049	9623	17.1	9.6	110
Chicano Studies BA	2007	3102		23.2	23.2	93
Gender Studies BS	2007					55
Language TBD BA	2012	3794		19.7	14.7	
Integrated Education BA and Credential	2008	3521				
Computer Systems BS	2007					
Activism and Social Processes BA	2011					
Biomedical Engineering/Medical Imaging BS	2012					
Integrative Studies BA	2008					
Nutrition BS	2010					
Working Class Studies BA	2012					

Graduate Programs:

Graduate programs present a different set of cost assumptions. Graduate courses tends to be more labor intensive, with students attending classes that are typically much smaller than undergraduate courses, leading to much lower Student Faculty Ratios. In addition, all graduate programs in the CSU require some type of culminating experience (a thesis for example) which requires extensive one to one interaction with faculty and this places additional demands on faculty workload. Finally, graduate programs frequently require administrative oversight and support that may be disproportionate when compared with undergraduate programs.

The CSU Chancellor's Office is cognizant of the higher costs associated with graduate education, and has issued guidelines to campuses as they consider implementing new master's degrees. A memo from Executive Vice Chancellor David S. Spence to CSU presidents (December 20, 2004) recommends: “

New master's degree programs should be projected only when the sponsoring department is well established and has achieved a level of quality that has been affirmed by a program review or, in subjects for which national accreditation is available, by a visiting team.

In addition:

New master's degree programs should be initiated only if (1) they have the enrollment potential to support the offering of at least four graduate-level courses each year, (2) there is evidence of the proposing department's capacity to support the level of research required for a graduate program, and (3) sufficient graduate-level coursework can be offered to permit a student's program to include 70% graduate-level coursework.

Table Two depicts data on the number of degrees granted to students in Masters Programs throughout the CSU (note that specialties within a program area – for example Botany within Biology or Creative Writing within English have been omitted). In addition, the table includes the average Student Faculty Ratio for programs in the CSU System drawn from the Academic Disciplines Report referenced above. Notice that even the highest enrollment graduate programs have lower ratios than undergraduate majors.

Table Two: Masters Programs

Program	Year	CSU SFR	2003 Degrees
Education MA	SS	14.7	4923
Business Administration MBA	SS	14.5	2371
Public Administration MPA	2009	13.5	491
English MA	2006	8.7	449
Computer Science MS	SS	11.5	448
Nursing MS	2010	9.7	395
Art MFA	2015	7.5	362
Biology MS	2008	5.5	241
History MA	2013	6.8	156
Mathematics MS	SS	8	103
Spanish MA	2011	9.6	70
Chemistry MS	2013	4.6	54
Management Information Systems MS	2011	12.2	22
Film and TV Production MFA	2009		19
Creative Writing MFA	2015		15
Clinical & Counseling Psychology MA	2011	7.8	12
Cognitive Science MA	2013		
Educational Technology MA	2010		
Peace and Conflict Studies MA	2008		
Visual Studies MA	2015		

Recommendations:

CSUCI should require all new programs seeking implementation to include a detailed study of both direct and indirect costs associated with beginning and sustaining a quality academic program. These costs should include, but not be limited to: new faculty salaries and benefits, equipment, supplies, facilities, and support staff as well as any costs resulting from accreditation or licensing.

CSUCI should develop a mix of programs to ensure that expensive programs are offset by less expensive programs and graduate programs are offset by undergraduate programs.

CSUCI should apply the Chancellor's Office guidelines when considering new graduate programs.



Demands for Occupational Employment and Majors
Subcommittee on Analysis of External Data of the Task Force on Academic Planning

7.25.05

Subcommittee on Enrollment Members:

Therese S. Eyermann, Ph.D.

Scott Frisch, Ph.D.

Amy Wallace, Ph.D.

Executive Summary

Information on national, CSU and Ventura County community college enrollments, in concert with occupational outlook information and economic forecasts are examined to determine which fields of study will best meet future demand. Areas that provide greater opportunities for large enrollment and low cost, while meeting workforce demands are Business, Education, and Psychology. Larger and moderately sized programs, with relatively low cost, are found in Communications, Criminal Justice and Social Sciences programs such as History and Sociology. Majors that meet the needs of community college students planning to transfer are Nursing, Education, the Arts, and Computer Science. Innovative and forward thinking fields of study, with community partnership potential include biotechnology, Computer Science, and Kinesiology/Nutrition/Fitness.

Demands for Occupational Employment and Majors

As stewards of taxpayer funds, and as stewards for the values and ideas that are transmitted to the next generation of citizens, we have an obligation to think carefully about the curricular path this institution will choose. These decisions cannot be determined by personal preferences, by the specific talents of individual faculty, nor by mirroring the standard curriculum one might find at any four year institution of higher education.

There is a reciprocal relationship between curriculum and society¹. The challenge is to preserve a body of knowledge valued and recognized by the expertise of the academy while still allowing the forces of innovation to mold the curriculum into a way that best serves the needs of the people whose tax dollars allow the operation of the higher education institution. Traditional curricula have outlived their usefulness if they don't prepare students for the world in which they live. Yet, societal forces influence curriculum to the point where some say disparagingly that we change curriculum to fit market pressures without concern for the canon². The Task Force on Academic Planning was mindful of these competing philosophies as it strove to balance conservation and innovation.

Overlaid on to this tension was the reality that CSUCI's enrollment will double over the next five years, and that each curricular step must support that growth.

Thus a data sub-committee was created to investigate a variety of data areas and to use this information as one of the bases for curricular decisions. As a public and state-supported institution, the sub-committee members felt that CSUCI has the obligation to meet the needs of the state in several ways.

First, we examined the current higher education system nationally and in California to determine both: the majors that one could expect to generate large enrollment; and, for the CSU system, which programs in the CSU system were already impacted, to determine if there were ways Channel Islands might take some strain off the CSU system. (See Appendices A, B, and C).

Second, since part of CSUCI's responsibility is to accept transfer students, we examined the majors for Community College students who expect to transfer to four year colleges (See Appendix D).

¹ Bastedo, Michael. 2005 "Curriculum in Higher Education: The Historical Roots of Contemporary Issues", in *American Higher Education in the Twenty-First Century: Social, Political, and Economic Challenges*. Ed. Altbach, P.G., Berdahl, R.O., Gumpert, P.J. Johns Hopkins University Press: Baltimore

² Bok, Derek. 2003. *Universities in the Marketplace* (2003). The Commercialization of Higher Education. Princeton University Press.

Third, we examined the demand for graduates in the fastest growing occupations. To satisfy this requirement the sub-committee examined data from the Bureau of Labor Statistics, the California Employment Development Department, and local economic forecasts (See Appendices E, F, and G).

Fourth, we conducted web searches and examined several reports dealing with the economic needs of the region and specific industry and major reports. These included the Ventura County Economic Outlook report, the Biotechnology Report (See Appendix H), the Delaware National Study of Instructional Costs and Productivity, and a report prepared by consultant Frank Jewett specifically for CSUCI on related topics in 2005 (See Appendix I).

Our findings are summarized in the attached spreadsheet: *Academic Majors Comparison*.

This table utilizes the major fields of study in the CSU system for the primary listing of possible majors.³ These are listed in column one. Information on the top bar is divided into four main areas;

- **Program Enrollment:** the relative enrollment sizes nationally, within the CSU system (including impacted programs), the Ventura County Community College District (VCCCD), and the current major fields at CSUCI, majors proposed in the June 2004 recommendations to President Rush, and the Task Forces proposed majors.
- **Community Needs:** Projected national, state, and local job projections over the current decade, including potential partnership opportunities with area businesses and industries.
- **Distinctiveness:** Majors with the potential for unique, value-added opportunities for students, majors with mission-based opportunities, i.e. interdisciplinary, service learning, multicultural and international perspectives, and majors that offer growth opportunities as emphases of existing majors.
- **Fiscal Ramifications:** Estimated instructional costs and the number of current CSUCI faculty to determine areas of anticipated faculty growth.

Program Enrollment

Columns 2 through 5 in the Academic Majors Comparison table provide National, state, and community college percentages by major field of study. Nationally, within the state and in the county's community college system, the largest percentage of students is found within the Business majors with approximately 20% of students enrolled in this major.⁴

³ Note: NCES does not provide the level of specificity in major fields that is found in the CSU data reports. Similarly, there is not a one to one correspondence between NCES and CSU listed majors and those found in the Community College, those currently at CSUCI, and proposed programs. Majors were aligned in ways that made the most sense for the particular grouping and that maximized cross comparisons.

⁴ NCES data identifies degrees awarded in 2001-02, the most recent year for which data is available. The Fall 2004 CSU data identifies those in majors and the Fall 2004 VCCCD data identifies those in majors

The largest areas of emphasis within Business are general Business, Accounting, Marketing, and Finance.

Among students attending four-year institutions, Social Sciences has the next largest percentage of students with 10% of student nationally and 8% of students within the CSU systems declaring majors in this area. The largest sub-fields within this area are History and Sociology. Nationally, Education is the next largest major with 8.2% of students enrolled in that field of study, while the next largest percentage of students seeking degrees in the CSU system was in the field of Engineering (7.9%),

Both nationally and within the CSU system students in Psychology, Health Professions, the Arts, and Communication enroll between 5 and 6% of the undergraduate population.

In the CSU system within the Arts, Art and Music were the largest subfields; within Education, Kinesiology and Childhood studies were the largest subfields. Health professions are comprised largely of those studying Nursing, and Public Administration's largest subfield is Criminal Justice.

VCCCD enrollment shows slightly different patterns from those found nationally. After Business, the largest percentages of students planning to transfer to four year institutions are found in the Health Professions (12.8%) and in Liberal Studies (10.1%). Nursing students again comprise the bulk of those in Health Professions. As with students attending four year institutions, those in the Arts (8.8%) are most likely to be in the areas of Art and Music; the largest single group of those majoring in Education (7.6%) is found in Childhood Studies; and Social Science students are most likely to be in the subfields of Sociology and History.

National Trends. To ensure that relatively small, but emerging majors were considered in the analysis, NCES trends in degrees awarded by major field were examined.⁵ Between 1996-97 and 2001-02, computer and information sciences grew 91%. During this same time the fields of parks, recreation, and leisure studies; visual and performing arts; communications and communications technologies; business; and philosophy and religion each increased over 20%. In contrast, between 1991-92 and 2001-02 there was a 16% decline in the field of mathematics and a 5% decline in Engineering. A synopsis of these data is found in the following Table 1.

More recent data have shown increases in two other areas. Within the past decade bioengineering and biomedical engineering programs have tripled and are expected to continue to grow as it becomes less an application of engineering and more a stand alone program.⁶ A nationwide survey of college freshman also identified recent increases in

planning to transfer to 4 year institutions only. For comparison purposes 'undeclared' students were not considered.

⁵ NCES. Table 252. Bachelor's degrees conferred by degree-granting institutions, by discipline division: Selected years, 1970-71 to 2001-02. <http://nces.ed.gov/programs/digest/d03/tables/dt252.asp>

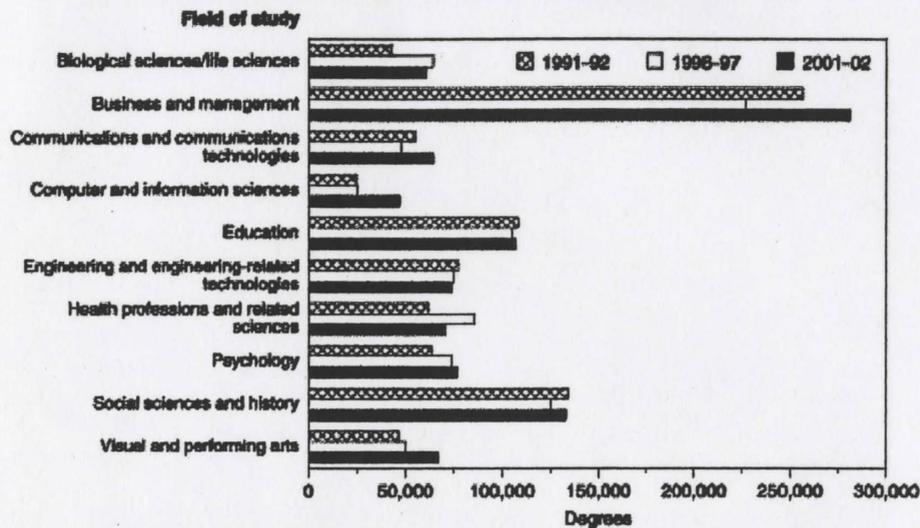
⁶ Loftus, Margaret. "Bioengineering Has Become One Of The Fastest-Growing Majors." November 2004, v. 14, no. 3. http://www.prism-magazine.org/nov04/tt_bioboom.cfm

student interest in particular majors.⁷ Student increased interest in majoring in biological sciences, biochemistry and biophysics has doubled over the past decade. Interest in nursing, pharmacy, and dentistry are also at all time highs.

In addition, the number of history majors at four-year colleges continues a decade long climb with the number of majors rising 8% between 2001-02 and 2002-03, compared to a nearly 3% general increase in the number of enrolled undergraduates during the same time frame.⁸

Table 1.

Figure 16. Trends in bachelor's degrees conferred by degree-granting institutions in selected fields of study: 1991-92, 1996-97, and 2001-02



SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), "Completions" surveys, 1991-92, 1996-97, and Fall 2002.

The percentage of students enrolled in majors at CSUCI is listed in Column 6 of the Academic Majors Comparison table. The largest major is Liberal Studies (27.2%) followed by Business (20.5%) and Psychology (12.5%). Also listed in this column are the dates for beginning majors that were recommended in the June, 2004 proposal.

⁷ HERI. The American Freshman. National Norms for Fall 2004.

http://www.gseis.ucla.edu/heri/PDFs/04_Norms_Flyer.pdf

⁸ <http://www.historians.org/Perspectives/Issues/2004/0404/rbtstudents0404.htm>

Community Needs

National Outlook. The Bureau of Labor Statistics provides information concerning the specific occupations that are projected to grow the fastest, along with the largest numerical increases and decreases in these occupations.⁹ An analysis of this information is found in Appendix E. The fastest growing occupations for college graduates between 2002 and 2012 are in the areas of Computer Science and Health Sciences. Details are found in Table 2 below.

Table 2. Projected Nationwide Occupational Growth Areas:	Percent Change: 2002-2012
Network systems and data communications analysts	57%
Physician assistants	49%
Medical records and health information technicians	47%
Computer software engineers, applications	46%
Computer software engineers, systems software	46%
Physical therapist assistants	46%
Fitness trainers and aerobics instructors	45%
Database administrators	44%
Veterinary technologists and technicians	44%
Dental hygienists	43%

Source: United State Bureau of Labor Statistics

A second way to examine job growth is by looking at the occupations with the most new jobs. The BLS estimates that the most new jobs will be in the areas of Education, Accounting and Computer Science. Details are found in the table below.

The spreadsheet, Academic Majors Comparison, also lists information about expected job growth for careers requiring Masters and Doctoral degrees. The fastest growing occupations and the occupations having the largest numerical job growth for Doctoral degree recipients are in the areas of: postsecondary teachers; computer and information scientists (research); medical scientists; clinical, counseling, and school psychologist; and biochemists and biophysicists.

⁹ BLS: Fastest growing occupations, 2002-2012. <http://www.bls.gov/emp/emptab3.htm> and <http://www.bls.gov/oco/ocotjt1.htm>.

Table 3. Projected Most New Jobs Nationwide:	Numerical Change: 2002-2012
Elementary school teachers, except special education	223,000
Accountants and auditors	205,000
Computer systems analysts	184,000
Secondary school teachers, except special & vocational education	180,000
Computer software engineers, applications	179,000
Special education teachers	130,000
Computer software engineers, systems software	128,000
Network systems and data communications analysts	106,000
Network and computer systems administrators	94,000
Computer programmers	73,000

Source: United State Bureau of Labor Statistics

The fastest growing occupations for Master's degree recipients are in the areas of: physical therapists; mental health and substance abuse social workers; rehabilitation counselors; survey researchers, and epidemiologists. In addition large job growth is also predicted for educational, vocational and school counselors, and for market research analysts.

State and County Outlook. The State of California Employment Development Department offers employment projections statewide and for specific counties.¹⁰ Appendix F provides specific information about the statewide occupational projections between 2002 and 2012. Statewide, the fastest percentage growth for bachelor degree prepared students will be found in the areas of Computer Science, fitness and health, financial advising and education. A synopsis of this is listed in Table 4.

For Masters and doctoral prepared students the fastest growing jobs will be in the areas of postsecondary Art, Drama and Music teachers (44.3%), English Language and Literature teachers (41.5%), Physical Therapists (42.9%) and Medical Scientists (34.7%).

Table 5 identifies the most new jobs projected statewide. The largest growth for jobs requiring a bachelor's degree is expected to take place in the areas of management, education, Computer Science, and accounting. Additionally an expected 56,800 new jobs will be created for nurses with an Associates degree and 13,400 new jobs will be created for those with a law degree. A synopsis of the bachelor's degree created jobs is found in Table 5.

¹⁰ <http://www.calmis.ca.gov/htmlfile/subject/occproj.htm>